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INDIAN NOTES



WINTER 1973 • IX No 1



MUSEUM ^{OF} THE AMERICAN INDIAN

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A MODERN KACHINA FIGURINE

This figure is an example of the contemporary style of sculptural art in which the subject is carved in an extraordinarily lifelike pose. Made in 1972 by Marshall Lomakema, this portrays Hümis Kachina, the being who most frequently appears at the Nimán ceremonies. He is carrying various gifts, including a watermelon, and his gourd rattle is suspended from his wrist.

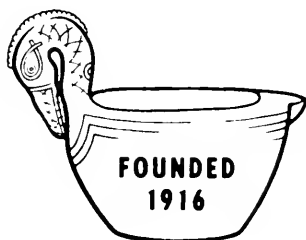
HOPI; Arizona
24/7777

1972
H: 24 inches

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Unless otherwise indicated,
all photographs are by
Carmelo Guadagno, Staff Photographer.



Diane Amussen, Editor
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THE HOPI WAY OF GIVING

In mid-December a special holiday exhibit opened: *The Hopi Way of Giving: Nimán Kachina*. The display presented 42 kachina dolls, toys, musical instruments, and articles of clothing used by the Hopi Indians of Arizona in their annual ceremony of Nimán, which celebrates both the harvest and the departure of the kachinas for the year. Photographs of Nimán ceremonies, taken by Emery Kopta between 1917 and 1920 when photographs were still permitted, were also included.

The kachinas arrive in the villages at Winter Solstice in December. They represent many spiritual forces. As such, they are messengers between man and the deities who may be called upon to help mankind. While they are present, the kachinas are represented by men wearing masks. The masks themselves contain the power which infuses the wearers with the identities of the spirits. Small carvings of cottonwood, painted and costumed to represent kachinas, are given to children to educate and familiarize them with the different beings.

The Hopi Way of Giving was organized and installed by Susan Krause-Martin and Marlene Martin, and continued through the end of February. For more information about the ceremonies, send ten cents postage for Exhibit Leaflet #2.

—Marlene Martin

Hopi children with kachina "dolls"





Above: The kachinas come into the plaza to dance for the villagers; *right*, assorted gifts given to children by the kachinas. (photos on page 2 and above, by Emery Kopta)





STANLEY R. GRANT

When Stanley Grant was sledding down the slope of West 155th Street to Riverside Drive, as a ten-year-old youngster, he was not anticipating that one day the Museum of the American Indian, Heye Foundation right on the corner would welcome him as the Chairman of the Board of Trustees. It is mere coincidence that his grade-school years were spent living in the Audubon Terrace neighborhood, but much later on Mr. Grant did know where to find the Museum, and what it was all about.

A born New Yorker, Mr. Grant's background has been totally in the world of investment banking and finance; for many years as a partner at Loeb, Rhoades & Co., and more recently as an independent financial consultant to corporations. A graduate of Columbia University Business School, selected last year to be honored as one of two recipients of the college's annual Alumnus of the Year award, Mr. Grant, despite his considerable knowledge of his avocation, has had no formal training in anthropology.

When queried, Mr. Grant couldn't quite remember what first aroused his interest in anthropology, but he thinks it was an article in the *Illustrated London News*. Whatever the cause, it was about 20 years ago that he started collecting, originally Sumerian seals, because, as he puts it, "nobody else seemed interested." As Mr. Grant succumbed to the collecting "bug," he also started reading books on America, early man, and Indians, developing an interest that soon focused on North American Indian artifacts. His first purchase in this area was a bannerstone, and Sumerian seals were left behind. This bannerstone led to others, and to prehistoric material, such as pipes, birdstones, boatstones, and more books. Rare books on voyages to America, travels, and various Indian tribes gave substance to the materials he continued to acquire, and simultaneously brought him back to the Museum on West 155th Street. Here his consuming interest in the heretofore little-known aspects of Indian life and culture were considerably expanded through his growing friendship with the Museum's director, Dr. Frederick Dockstader, and curator William F. Stiles. This association led to an invitation in 1965 to become a trustee of the Museum, a post he has filled with close interest and enthusiasm. During these years, many a Sunday would find Stanley Grant visiting the exhibits, peeking behind the scenes at Museum acquisitions, watching Mr. Stiles's skillful restoration of valued antiquities, or browsing in the Museum Shop — as a steady customer.

In May 1972, Mr. Grant's colleagues on the Board elected him as the fourth Chairman of the Board of Trustees, a position to which he has devoted time and energy, providing the stimulus for a new program of growth in Museum activities.

— Joan Barnett

ARCHEOLOGICAL EXPEDITION CANCELLED

At the end of last year, we had completed our plans for a major expedition to Nicaragua, to undertake archeological investigations at a site not far from Managua. Several staff members had been selected to accompany Lydia Wyckoff, a Research Associate of the Museum and instructor in anthropology at the University of New Haven. The tragic earthquake has of course caused us to cancel these plans for the present, but we are hoping local conditions may make it possible to proceed with the expedition in 1974.

CONSERVATION AT THE MUSEUM

Ellenda L. Wulfestieg

Conservator

The word *conservation* usually makes people think of environment — the preservation of wildlife habitats or the fight against the pollution of what we have left of nature's creations. In spirit this is also what is involved in museum conservation, the preservation of the nature of the museum — and, for us, the essential and diverse qualities that are the basis of the Museum, i.e., our collection — and the fight against the pollution and contamination or damage to the collection by insects, fungi, atmospheric changes, and at the hands of man.

We are interested in the preservation of all the objects in the collection, from hammer stones to intricately carved and painted masks, without regard to current esthetic values. The material that survives today will be all that is known of the earliest peoples of the Americas tomorrow. Since we are preserving history for future generations, it is our responsibility to maintain as comprehensive a collection as possible, encompassing the entire range of cultural objects of the original inhabitants of this vast land.

With today's awareness of the fragility of nature and the rapid disappearance of our cultural heritage, it has become increasingly apparent that formal programs of conservation are vital. Early museum care was frequently predicated on the assumption that objects could take care of themselves, particularly in the case of stone, wood, and bone.

Of course this is not so. What artifacts we do find have been preserved only because they were in relatively stable environments or because their composition was such that their extremely slow rate of deterioration allowed them to be found before they had decomposed. In the very dry, stable environments of caves in the southwestern United States, basketry, feathers, leather, wood, and even mummified bodies have been found. But in the Northeast, where flood, drought, freezing, and heating are common, archeologists are lucky to find anything more than stone artifacts and a few pieces of potsherds, bone, or charcoal. It is these sharp changes in environment, in addition to attack by various insects, bacteria, or fungi, that cause major decomposition of objects. A change in climate causes a change in every object, although it may be on a molecular level. Even metal slowly disintegrates once it is exposed to oxygen.

Although the Museum has long been concerned over this matter of conservation, not only were funds and facilities to correct the situation lacking, but not much was known about the specific causes of deterioration and the means to prevent it. A comprehensive conservation program is particularly important for the Research Branch in the Bronx, where 90 per cent of the collection is housed. The exhibition building at 155th Street and Broadway has had a system of climate controls since 1963 and a fumigation chamber through which new acquisitions must pass, but the Annex has no climate-control system nor means to treat the large amount of material that comes and goes through its doors. The situation has become aggravated by the expanding loan program, which often results in specimens being returned directly to the Annex rather than going through the Museum fumigation process. Sometimes objects have become contaminated and thereby introduce infestation directly to the study collections.

Because of this, the Museum has recently begun a comprehensive program of conservation. In January 1972, with support from the Jackson Hole Conservation Fund, a staff position of Conservator was created and office space allocated at the Research Branch. In June 1972, the Conservator received a matching grant of \$19,460 from the National Endowment for the Arts to begin a comprehensive conservation program, design a laboratory facility for the Research Branch, purchase needed laboratory equipment and supplies, and investigate the feasibility of installing a full system of climate control in the Research Branch. So far the program has been particularly successful in alerting and educating us to the problems we have and in helping us arrive at a general understanding of what steps we should take to protect our collection.

Still in the organization stage, initial conservation work has concentrated on the repair of damaged objects in the collection, the removal of old mold growths and insect remains, and, of course, the attempt to prevent further damage or infestation. Eventually, as a laboratory is built and developed into a facility that is able to handle most all of the Museum's conservation needs, it is hoped that we will be able to aid the Museum's members with their own conservation problems. It is also hoped that we will be able to develop the conservation laboratory into a regional facility in which other museums and conservators can participate and where training in conservation techniques can be given. Because of the great variety of objects and substances in the collection, the Museum is uniquely qualified to become a center for both work and research in the science of material conservation.



Southwestern: Chiricahua Apache buckskin costume, worn by Josephine Tarrant, Winnebago-Hopi

The photographs on pages 8-11 are by Beall Turecamo, Courtesy of The Fashion Group, Inc.

INDIAN FASHION SHOW

The Museum was happy to furnish twenty-eight examples of garments from many tribes throughout the United States, for presentation at the Annual Meeting of The Fashion Group, held December 4th at the Americana Hotel in New York City. All of the clothing, with suitable accessories, was worn by people from the local Indian community. The costumes were selected by Dr. Dockstader, who also did the commentary on the show. Mrs. Clydia Nahwooksy, Director of Indian Awareness at the Smithsonian Institution, narrated a film and slide presentation, based upon slides from the Museum's collection.

This proved to be such a success that we were later invited to present a repeat performance on the Dick Cavett television show, Thursday,



Northwest Coast: Woven Chilkat shirt and painted basketry hat, worn by Jerry Crane, Sauk-Fox

December 28th. On this occasion, sixteen costumes were shown on a 45-minute spot, with the same Indian men and women serving as models. Dr. Dockstader was the narrator, and those who saw the color presentation of this event will not soon forget the beauty of the costuming and the dignity of Mr. Cavett's comments. Helping behind the scenes on these two shows were Ellenda Wulfestieg, our Conservator, and Rose Martelli, Research Associate. We are grateful to them for their hard work.

We hope to provide this same type of presentation at a future occasion. It is a major way by which we can make our collections "come alive," and also reveals the dignity, beauty and functional quality of Indian clothing.



California: Hupa deerskin skirt, decorated with seed-bead necklaces, worn by Jan Collins, Pawnee-Cherokee

*Woodlands: Potawatomi
clothing, beaded on trade
cloth, worn by Donald
Hopkins, Narragansett*



Recent Television Appearances

On Wednesday, January 24th, Elena Eritta, a Research Associate, appeared as a guest on the Lee Leonard Midday Show, over WNEW-TV. The theme of the show was Mexico, and in company with a panel of guest participants, she presented some of our specimens and garments from several regions of the country. Her experience as an archeologist enabled her to emphasize the prehistoric heritage of Mexico.

In March, Dr. Dockstader and Miss Eritta were scheduled to appear on the NBC *Adventure* television show, emphasizing the resources of the Museum and the wide-ranging appeal of our collections to today's population.



NED HATATHLI

October 11, 1921 – October 16, 1972

On October 16th, Dr. Ned Hatathli died from an accidental gunshot wound. That simple statement marks the end of one of the most remarkable careers on the Navajo Reservation. From his birth, near Tuba City, Arizona, until his tragic death near Chinle, he steadily grew in achievement and service to his people in a manner rarely equaled.

He graduated from Tuba City High School as class valedictorian, served with the United States Navy in the Pacific in World War II, and then went to Haskell Institute to study business education. Later he transferred to Northern Arizona University at Flagstaff, earning a B.S. degree *cum laude*, and became organizer and manager of the Navajo Arts and Crafts Guild, bringing that organization into a strong position in the crafts business. In 1955 he was elected to the Navajo Tribal Council, and eventually he headed the Resources Division of the tribe. Also in 1955, he became the first president of the newly founded Navajo Community College — the first institution of higher learning on an Indian Reservation. Under his leadership, the college has grown from a fledgling institution into what promises to be the outstanding Indian educational center in the country.

During his lifetime he was awarded many honors and appointments, and became one of the most influential and effective members of the Navajo community. He leaves a widow, Florence, a son, and three daughters. His position at the College has been filled by Thomas Atcitty, the very able Vice President.

On a personal note, as one who knew Ned, and lived with him for a brief time as a roommate, enjoying his quiet humor and keen mind, I can only deeply regret his untimely death. He was filled with enthusiastic dreams for the future of the College and for his people. Plans have been made to dedicate the new Navajo Cultural Center to his memory. Ned would have liked that.

— F. J. Dockstader

ROCK SHELTERS IN TENNESSEE

William F. Stiles
Curator of Collections

During the past six years I have visited, tested and partially excavated ten rock shelters in North Central Tennessee, on behalf of the Museum. This research has led me to certain conclusions and opinions.

There are large numbers of shelters in this mountainous area, and unfortunately most of them have been ravaged. Some that are in remote and quite inaccessible areas, however, have managed to escape total destruction. I have been able to visit them through the good graces of my friend Clyde Cooper, a former revenue agent for the United States Government, who located many while on foot in the forest. It is on the relatively undamaged shelters that my conclusions are based.

All the shelters seem to be of sandstone that has been eroded by water action [1]. The ones that have been occupied are found on small creeks, or branches, that rarely run dry. One feature the shelters have in common is that they face in a southerly direction, so that the occupant has the advantage of sun for the better part of the day.



[1] Shelter of eroded sandstone, Morgan County, Tenn. (photo by William Stiles)

It is apparent that the shelters were primarily abodes for hunters when they wanted to get away from camp life or needed supplies of fresh meat and skins. These hunters would leave their permanent home and reach the hunting area of their choice by water. They would beach their dugout at the mouth of a creek and follow it to a suitable shelter, where they would then camp.

In warm weather the shelters were left exposed, but during the winter months poles and thatch were used to face off the overhang and form an enclosure that could be kept warm and comfortable.

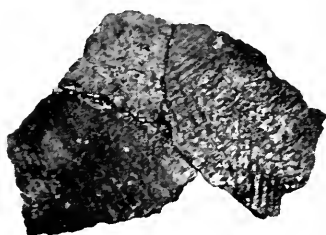
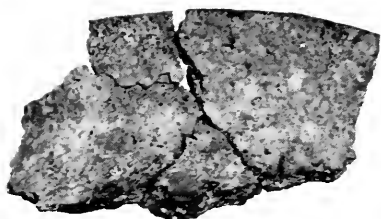
I believe that most of these shelters were used by men. Sometimes they would bring the male children of the family to learn the ways of the forest, and occasionally women accompanied them. In a very small percentage of the shelters the density of the midden indicates that families did live there. These shelters are enormous, with deep cavernous areas where several families could reside comfortably for a long period of time.

A shelter was probably revisited many times by several individual Indians during their lifetimes, and used by succeeding generations and cultures as well. Some shelters show evidence of use by Indians as late as the 16th century; others were occupied by white trappers up until the 19th century, and in the 20th century some were used to conceal illegal stills.

Archeological evidence indicates that little if anything of importance was brought to the shelter — only necessities that were either expendable or portable.

Specimens found *in situ*, such as stone anvils [2], were made on the spot and left for future use; each hunter had his own. Because bell-shaped hammers are scarce on these sites, my impression is that they were carried





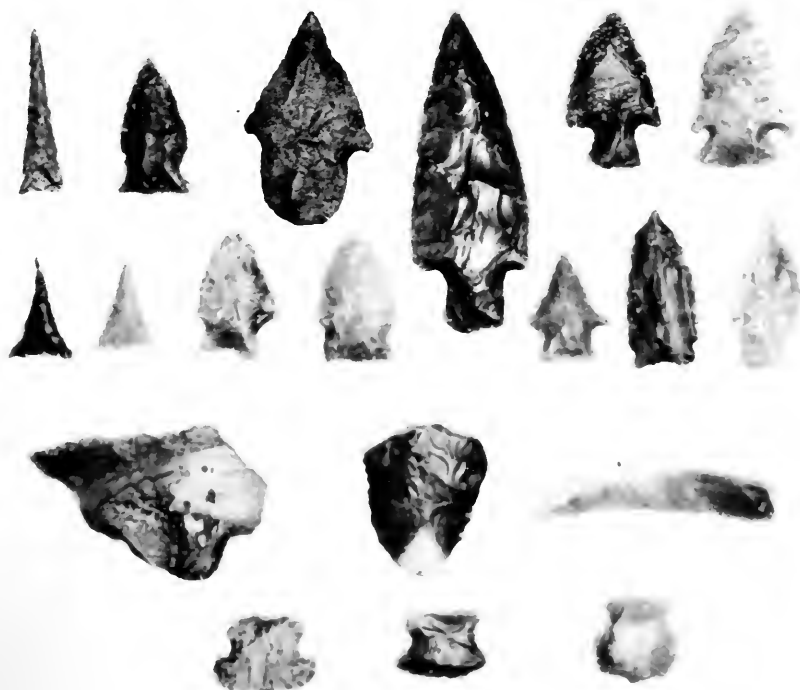
[3] Potsherds: *top*, plain (24/1656 D), 3 x 4¾ in.; *bottom*, shell-tempered (24/1656 E), 3½ x 3½ in.

to and from the shelter. Those few found were probably left in anticipation of a return trip that never occurred.

Pottery vessels were obviously used in the shelters, but very few are found. Only potsherds [3], mostly shell-tempered, remain, but not enough to allow restoration of a vessel. Inasmuch as I have found no evidence of pottery-making in the shelters, I assume that vessels were brought from the village. I suggest the following reasons for the lack of restorable vessels: if there were breakage, fragments large enough for other uses might have been taken back to the village; or if children were at the shelter, they could have disposed of the potsherds at play.

Chipped objects [4] found in profusion at the shelters are mostly broken or of poor quality; the occasional fine piece may have been lost or

[4] Chipped objects: knife, projectile points, tools, and scrapers; the longest (L: 3½ in.) is a knife (24/1661, 24/1666-1669, 24/1675, 24/1679-1680, 24/1686).



left for a future use. The small chipped scrapers were made for a specific purpose and disposed of. They were easily made of the portion left over after the manufacture of blades or projectiles, or of broken projectile points. The type of projectile indicates that a bow and possibly throwing stick were used.

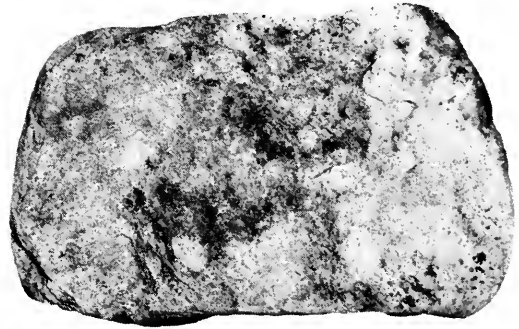
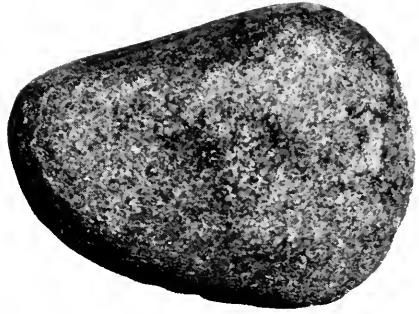
Celts and grooved axes are a rarity, and those found were probably left for the next visit. Ornaments such as stone gorgets, beads, pendants, are seldom found, but when they are, they suggest female occupancy.

Bone is found, but not often in great quantity. Those bones remaining have been cracked for their marrow, which indicates that most of the animal carcasses were removed intact to the main villages; consumption at the shelter was limited to what was needed to survive.

I am convinced that crudely sharpened split deer and bear leg bone objects [5] — which are generally designated as bone awls — were used as forks to spear pieces of meat in a boiling pot of stew or to hold a piece of roast meat taken from the fire. Those that were carefully made and highly polished, and those with perforations, were certainly used to perforate skin for sewing or lacing; since only a few of these are found, they were probably lost by their original owners. It is likely that the hunters usually carried such objects with them because they took so much time and labor to make.

[5] Bone objects (*left to right*): 5406 (L: 7¼ in.); 5406; top, 9/6269; bottom, 24/1684; right top, 23/7796; right bottom, 24/1684





[6] *Top*, stone hammer (24/1670); *bottom*, stone fleshing tool (24/1672), 8 x 6½ x 3½.

Common stone hammers [6, *top*] are in evidence. These, of course, were expendable.

Stone blades used as fleshing tools occur in many shelters [6, *bottom*], indicating the fleshing of a skin taken from an animal that had been consumed on the spot. Although the fleshing and tanning process was usually a woman's work, both sexes could do it.

Small fishbones are found in the midden, as are the armor plates from sturgeon, which indicates a varied diet. Some shelters have yielded bone fishhooks [5], but I believe most fish was taken by spear or bow and arrow. I have found no stone sinkers, so I assume that nets were not used.

CONCLUSION

The potsherds, mostly shell-tempered, some few grit-tempered, present a variety of design; cord-wrapped paddle predominate, while a few show complicated stamp and still others are incised. There is also a large variety of projectile points, indicating shelter occupancy from approximately 300 B.C. through the 16th century.



Photo by Leonardo Legrand

THE MUSEUM SHOP — A BRIEF LISTING

Here are some of the items of unusual interest now available at the Shop.

Cuna Indian *orsualas*

Collected in the San Blas Islands, Panama, these scepters of authority are carved at the top with birds, animals, and saints. Prices range from \$18 to \$75 each.

Embroidered huípiles and wall hangings from Guatemala

Now available at one-third off the list price.

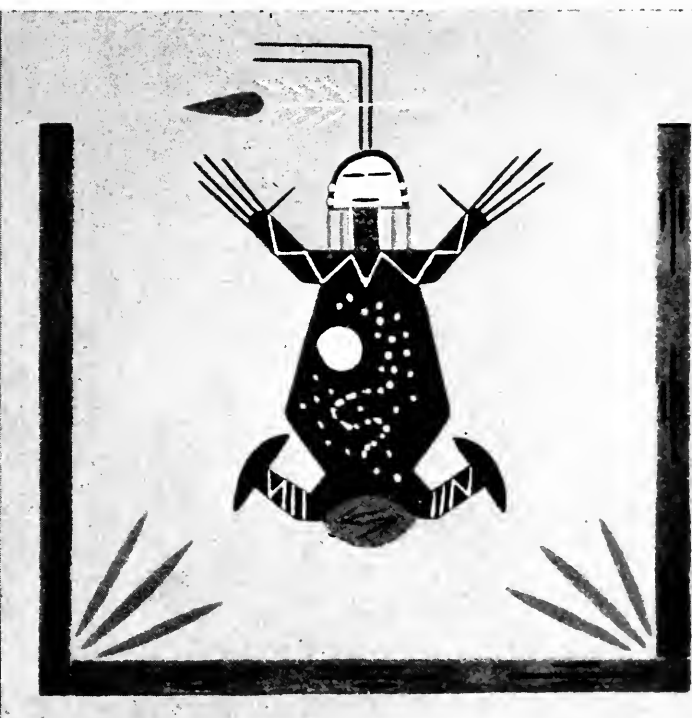
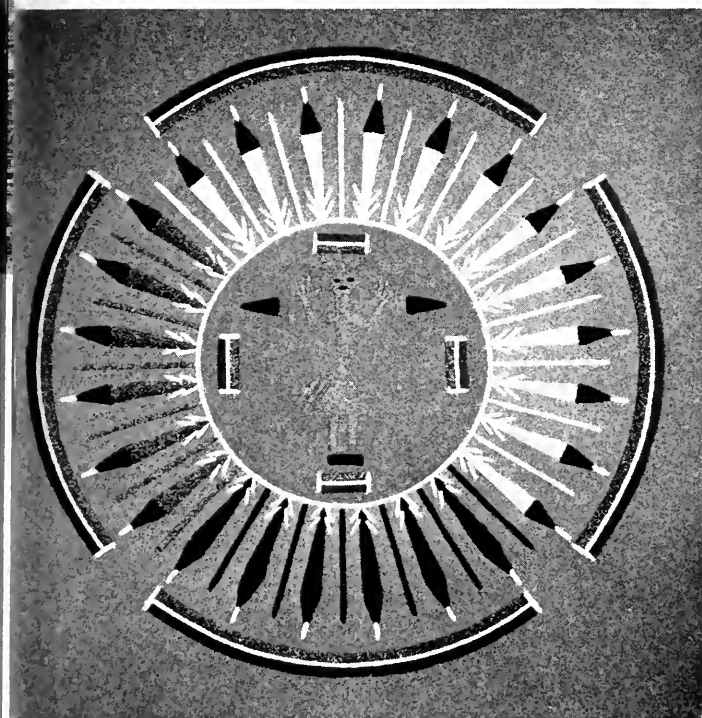
Navajo rugs

A very fine selection, usually ranging in price from \$150 to \$2700, is now being offered to members and friends of members at one-third off the list price.

Navajo sand paintings

The selection varies in size:

40 in. square	\$350
24 in. square	150
16 in. square	95
12 in. square	28
8 in. square	12
4 x 6 in.	6



Left: Sun and Eagle, sandpainting by Billy Joe Costello, Cuba, N. Mex. (16 x 16 in.);
right, Father Sky, sandpainting by John Lee Begay, Crown Point, N. Mex. (12 x 12 in.)

Of special interest is a blackware plate made by Marie and Julian Martínez of San Idelfonso, collected in the 1930s and priced at \$900.

The Shop is always pleased to see you in the Museum or to hear from you by letter. Quite often we can send Polaroid pictures to aid your selection.

— Mary W. Williams



A SILVER ANNIVERSARY

On February 3rd our staff photographer, Carmelo Guadagno, was given a surprise party when the entire staff joined to celebrate his twenty-fifth year at the Museum. He had placed an advertisement in the Help Wanted section of *The New York Times* in January 1948; following an interview with Dr. Heye, he came to work on February 3rd as an all-round helper to the preparation department.

Following an intensive course in photography school, he was transferred in 1958 to organize a formal Photography Department. It has since become one of the most important services of the Museum, and is now known throughout the world for the quality and wide range of its visual-aid services.

Mr. Guadagno has contributed to many publications on the American Indian; indeed, there are few major works on the subject which have not made use of his talents. In the past quarter-century, "Jim," as he is known to his friends, has graduated from a curatorial assistant to a position as one of the top photographers of Amerindian material culture in the world. We are proud to have him on our staff, and wish him many, many years of continued success.

ARIKARA ORDER OF BUTCHERING A BUFFALO

Melvin R. Gilmore

The Indian order of cutting up a beef was different from ours because of the different conditions of life. First of all, the meat must be cut up in such wise as to accommodate the uses of parts and the means of preservation. For instance, we make no use of the sinew, but that was a valuable part in Indian economy, therefore the meat-cutting plan must be such as to preserve that commodity. Also the only means the Indian had of preservation of meat was by drying. On that account the cuts must be so planned as best to prepare for the process of drying. And as butchering was a community industry, all members of the community being employed in the work, each according to his several ability, the cutting up of the carcass must be according to a plan which would be best fitted to facilitate an equitable division of the meat.

To save unnecessary weight in transportation the cutting was planned to strip all the meat, leaving the bones on the prairie where the animal was killed, except the backbone, the neck, and the ribs, which could not well be stripped out. These pieces were used for immediate cooking and eating, while the rest of the muscular structure was taken into camp and there cut into thin strips and dried for preservation. Large bones were broken with sledge hammers to obtain the marrow.

The fat was taken off and rendered down and poured, while warm and fluid, into the packing cases where it hardened on cooling; thus it was preserved for future use. The intestines were cleaned and used for casing, in which was stuffed choice bits of lean and fat in proper proportions for cooking.

The heart, liver, kidneys, and tripe were cooked and eaten fresh; in fact, the butchers often cut off and ate pieces of the raw liver while at their work; flavoring it first with the gall. Some had the hardihood to drink the clear gall directly from the gall duct. The tripe was washed in the blood and divided among the butchers. This part was cooked by boiling.

The butchers stripped off the skin, leaving the carcass lying on the skin while the division of the meat was made, taking first the cuts on one side, then turning over the carcass and taking the corresponding cuts from the other side. These eight pairs of cuts are as follows:

1. *Kataks*, the muscle back of the hip bone
2. *Swis*, the muscle in front of the hip bone
3. *Hstihako*, the muscle on the back from hip to neck: it is from these two long muscles on the back that the sinew is obtained.
4. *Winu*, the muscles of foreleg and shoulder
5. *Kaku*, all the muscles of the hind leg below the hip joint
6. *Wikatakh*, all the flank muscle
7. *Cisu*, the muscles on the side of the neck
8. *Satu*, the ribs of one side altogether

There now remain two more parts which count as full cuts, and which naturally are not paired, namely the neck and the backbone. There is also the tail, used for soup, which does not count as a full cut, but is allotted with the other odd small parts, as the tongue, heart, liver, and so forth.

Note: This article is based on information from several Arikara sources and on observation of the process in killing and dressing a beef in August 1923.

THE ANTHROPOLOGICAL ANALYSIS OF MATERIAL CULTURE

or

HOW TO READ AN INDIAN ARTIFACT

U. Vincent Wilcox

Curator, Research Branch

The Museum is very like a library; its collections are like books. Each specimen has locked within it an encyclopedia of information concerning the life and culture of the person or persons who made and used it. Just as one must know the meaning of the written word in order to fully appreciate a book, so one must learn how to "read" an artifact in order to grasp its full significance. Although it is possible to obtain considerable esthetic pleasure merely from the visual image of a specimen, the ability to understand the "language" of the artifact adds a greater dimension to one's appreciation. On the other hand, the inability to read an artifact would be similar to the failure to recognize as meaningful words and sentences the various arrangements of letters on a written page.

Unfortunately, learning how to read artifacts is not the same as learning how to read the written word. There is no standard alphabet. It is more like putting together a picture jigsaw puzzle — one with no ends or boundaries. The more pieces that can be put together, the clearer the picture and the easier it becomes to fit yet more pieces together. But to make matters more difficult, the picture in the puzzle is to our eyes often abstract or unrecognizable.

Although it takes years of education, experience, and accumulated knowledge for one to become truly proficient at reading artifacts, it is not



Smoking pipe, Sioux (4/4690). L: 31 in.

difficult for anyone to learn a few of the basic analytical techniques employed by the anthropologist. Essentially, the procedure is simple; the anthropologist asks six basic questions of every specimen: *who?* *when?* *where?* *what?* *how?* and *why?* To answer the *who*, *when*, *where*, and to some extent the *why*, usually requires considerable expertise which the casual museum visitor does not possess. Generally speaking, the answers to the *who*, *when*, and *where* are provided the anthropologist through study of the context in which the specimen was collected. The museum visitor is given some, if not all, of this information in display-case labels. Therefore, we will here discuss only the *what*, *how*, and *why*.

The purpose in asking these questions is to attempt to reconstruct the life and environment of the people who made and used the artifacts. This is done by trying to identify as many individual activities as possible that might be reflected in any one specimen. By inferring general behavior from specific activities, we are able to achieve such a reconstruction.

As an example, let us take for analysis a fairly typical Plains Indian smoking pipe [1]. This particular specimen (4/4690) consists of a carved stone (catlinite) pipe bowl [2] with a separate wooden stem [3]; the latter is shaped in the typical flat or platform style, with a series of notches — three sets of four plus one alone — along either edge. The notches show traces of red coloration. There are two lengths of dyed yellow horsehair attached to the stem, one merely a short tuft tied on with sinew, the other long and braided and tied on with two lengths of pink silk ribbon [4]. Nearer the mouthpiece the stem is wrapped with a pair of cotton threads, between which are wrapped red, yellow, and purple-dyed porcupine quills [5]. At the mouthpiece a gray and green feathered bird scalp, probably that of a mallard duck, is attached by a short piece of purple silk ribbon sewn tightly with black cotton thread [6].



Our first question is *What?* Not, What is the function of this specimen? (an entirely different question to be dealt with later); but, What is the specimen made of? What are the constituent elements that together form the specimen as a single whole?

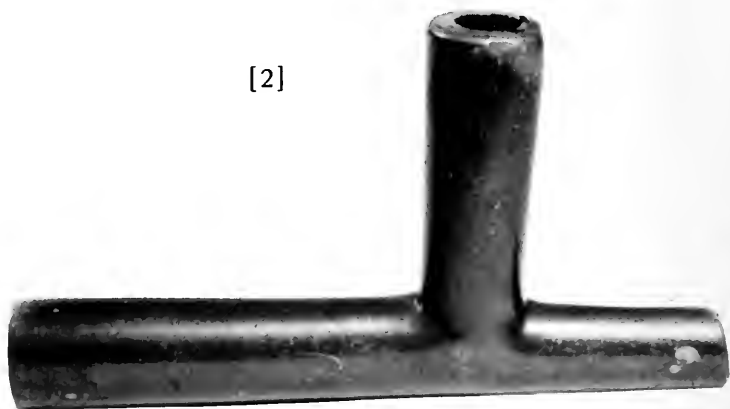
From the description given above, and the accompanying photographs, we can list the *what* as follows:

1. Carved stone pipe bowl: this stone is of that certain red slate identified by Catlin in the early 1800s and named in his honor. It is the usual material employed by the Plains and Prairie tribes for their smoking pipes.
2. Carved wooden pipe stem, drilled longitudinally and notched at the sides
3. Horsehair, two pieces, one of which is braided
4. Sinew
5. Silk ribbons
6. Cotton thread
7. Porcupine quills
8. Red, purple, yellow, and pink dyes or paint used in coloring the silk, horsehair, porcupine quills, and notches in the stem
9. Bird scalp

We now have the specimen broken down to nine basic elements. We should recognize the fact that none of these occur together in nature in the present combination, *i.e.*, as a smoking pipe. This point, however obvious, is important. We must assume that the elements came together in this form as a result of human activity. The purpose of our next question is to determine what sort of human activity: *How* did these elements come to be in the form displayed by this particular specimen? Let us attempt to reconstruct some of these activities on the basis of our general knowledge of the natural world and human behavior, taking each element in order.

Stone pipe bowl. Catlinite does not occur regularly upon the ground or along riverbeds where it can be casually picked up and utilized. It must be quarried, and some travel, often over considerable distances, may be necessary to reach the quarry. While there, the individuals must find shelter and food, so some sort of camp must be made. Furthermore,

[2]



traveling and setting up camp far from home might require certain political or military negotiations with other groups of people. Quarrying itself is a specialized activity, involving a specific skill and technology. Once quarried and either roughly shaped or even finished, the rock must be carried away, so that some form of transportation is necessary, whether it be mechanized, by draft animal, or back pack. Finally, the stone must be carved, drilled, and finished, an activity that indicates at least some skill and practice.

It should be apparent that by following the premise, if such-and-such is true, then so-and-so must have happened, we can infer all sorts of specialized activities from any given element.



[3]

Wooden pipe stem. This stem was formed by the carving and drilling of wood — probably a piece either found, or acquired by chopping down a tree. Woodworking requires the use of certain tools which also must be manufactured. Thus the stem suggests that a fairly competent technology existed, along with skill and experience in working with wood.

Horsehair. The obvious implication here is the presence of the horse. Since the latter is not native to the Americas — at least since the Pleistocene — the use of horsehair indicates generally the presence of non-Indian peoples. Direct contact with non-Indians is not necessarily implied, but access to their goods is.

Given our general knowledge of Indian history, we know that the Plains



[4]

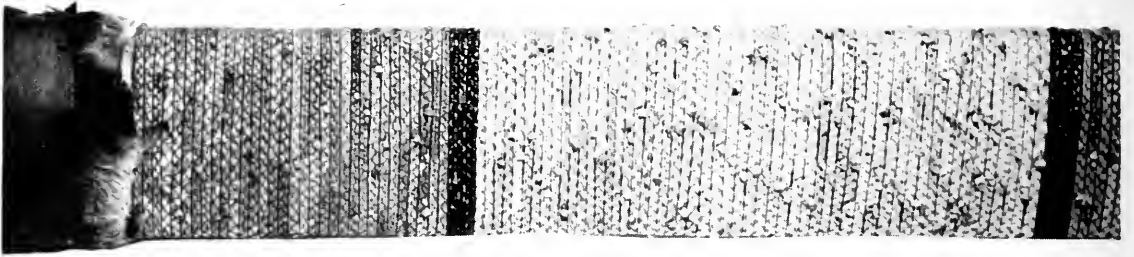
Indians prized the horse. The presence of horsehair on this specimen would seem to substantiate that esteem. However, taken out of context, the presence of horsehair merely indicates a proximity or access to horses, which could just as easily have been hunted as ridden. We can either infer the existence of the fairly complex horse technology as we know it from history, or an entirely different usage involving the hunting of horses, and perhaps other large game, by men on foot.

The fact that some of the horsehairs are braided together may also be significant. The techniques of twisting, braiding, and knotting of fibers together is integral to the manufacture of ropes, nets, and textiles. The presence of braided hair may imply the existence of at least a rudimentary knowledge of cordage and weaving.

Sinew. Sinews are animal tendons, strong cords of muscular tissue. When properly cured, they make excellent thread for binding and lashing. Their presence indicates a knowledge of butchering and hence a form of hunting technology.

Silk ribbons. These elements represent a number of interesting activities and a very specialized technology. The cultivation of the silkworm, the gathering of the threads and their weaving into very fine strips of ribbon is a complicated process. However, since the silkworm is not native to the Americas, and, unlike the horse, cannot travel under its own power, the silk, either as threads or in finished ribbon form, must have been brought here, presumably by human agency. Hence, we have further evidence of contact with non-Indians and it involves some face-to-face confrontation; this could have been either in the form of commercial exchange or military activity whereby the ribbons were war booty. If commercial exchange, some means of communication, either by word or gesture, was necessary, and a scale of values for various different objects is implied. Military activity requires a specialized technology, and both it and commercial exchange suggest a variety of social and political structures.

Cotton thread. Cotton, although occasionally collected wild, is generally cultivated. The cotton bolls must be cleaned and the fibers straightened before they are spun into thread. Therefore thread indicates not only the technical knowledge of plant cultivation, with its own broad implications, but also considerable sophistication in working with fibers, and the possibility of some experience with weaving. However, since our general knowledge of Plains Indian history and culture does not confirm the existence of either cotton cultivation or sophisticated textile skills, we



[5]

should conclude that the cotton thread was manufactured elsewhere, most probably by non-Indians. Thus, we have further evidence of out-group contact, and again, it could be in the nature of either commercial exchange or military action.

Porcupine quills. To obtain porcupine quills one must first locate a porcupine. The porcupine is a forest dweller, and since the people who used this pipe lived on the Plains, considerable travel is suggested, culminating in hunting, trading, or military activity.

The means and manner in which the quills were flattened and wrapped to form a design indicates a degree of skill and artistic sensibility. Porcupine quillwork is a specialized craft unique to the North American Indian. Working with quills is similar in basic technique to stitching and sewing. The presence of quillwork could possibly suggest the existence of other crafts — clothing manufacture, for example — which require similar skill with a needle and thread.

Dyes. The porcupine does not have red, yellow, and purple quills, nor does the horse sport a mane or tail so yellow as the hair on this pipe stem. The red stain in the notches of the stem is not natural, and the silk in the ribbons has also been artificially colored — probably before the ribbons were acquired by our pipemakers, however.

Dyes and paints may be manufactured from a number of vegetable and mineral substances. To produce a dye or paint requires familiarity with a variety of plants and minerals and the ability to find them in the wild. In some cases it is necessary to search a wide area in order to locate the plant or mineral which is the source of a particular color. It is entirely possible that many of the wild plants used for dyes were also foodstuffs. Since the application of heat is often a step within the process of dyeing, this may imply some knowledge of cooking.

Bird scalp. From the green luster of the feathers, this scalp appears to belong to one of the several species of wild duck found throughout North

America. The duck had to be hunted, killed, retrieved, butchered, and the skin cured before its lustrous green scalp could appear on this pipe. We might also logically infer that the rest of the duck was eaten, thus suggesting part of the diet of our pipemakers. Since ducks are water fowl and seasonal in their movements, the scalp gives us further clues as to the environment and perhaps the seasonal activities of our hunters.

One more point must be made before we generalize upon our analysis of this piece. Each and every element, from pipe stone to bird scalp, could have been obtained ready-made through trade or other personal contact with other peoples. We have been assuming that all the elements, except for a few which are likely trade goods, were manufactured locally. Given our general background knowledge of Plains culture and history, this is a fairly safe assumption. To be truly faithful to our analytical procedure, however, we must accept the possibility that every element was acquired from persons or groups other than the one which utilized the specimen as a single artifact. If this is true, we are faced with the implications of commercial exchange and a considerable degree of social interaction, conceivably in the form of some sort of craft specialization.

From our considerations above concerning *how* each element came to become part of our smoking pipe, it is possible to generalize the following about the culture of the pipemaker:

Environment. Contains available animal, mineral, and vegetable resources, woodland areas, and water courses. There are also available areas of open grassland suitable for grazing horses.

Subsistence. Apparently based on hunting and gathering. Foods are probably cooked. Animal skins are most likely used for a variety of purposes.



[6]

Travel and transportation. A high degree of mobility is implied, and horses are probably depended upon for transportation.

Social and political organization. Differentiations based on age, sex, wealth, or otherwise are not known. However, there is a degree of contact with other peoples, which usually requires some form of social or political understanding of other groups. Contact with non-Indian peoples also means the probable diffusion of certain ideas and concepts in addition to material objects.

Clearly we may infer much information about the culture of the pipemaker merely from a close analysis of a single specimen.

Our final question is *why*? Here we must be exceptionally careful not to leave our area of controlled inference for the realm of pure speculation. When answering the question *how*, speculation is checked by our knowledge of the limitations of human behavior, but when we attempt to answer the question *why*, we are constrained only by the boundaries of human imagination.

Why brings us back to the question we passed over at the beginning of our analysis, What is the function of this specimen? In other words, why were all these elements put together to form this single specimen?

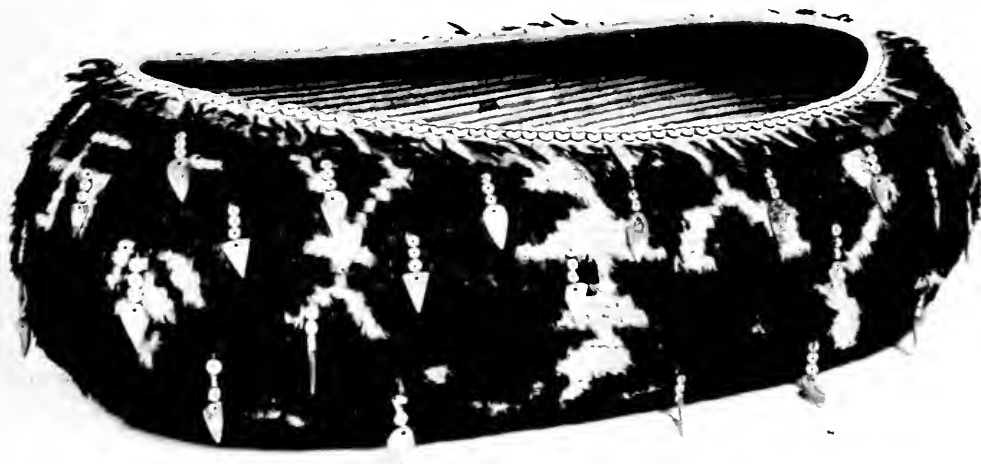
The specimen is a smoking pipe — at least, we know from our own experience that it can be used as one. If we take for a microscopic or spectroscopic examination a sample of the carbonized substance that lines the inside of the pipe bowl, then perhaps we can determine exactly what was smoked or burned.

If the basic function of the pipe is to burn some substance, such as tobacco, whose smoke is then inhaled or blown, then we must consider that the only essential elements are the pipe bowl and stem. The ribbonwork, notching, and quillwork are completely superfluous to blowing smoke. We know from observing human behavior that man is essentially lazy and will do the least amount of work necessary to accomplish a task. Therefore we must assume that, for the maker, this pipe was something more than just a smoking device. Whether it was also decorative or part of some magical or ritual paraphernalia cannot be determined at this point. Suffice it to say, the users of this pipe maintained some custom of smoking, and there was more to this act than merely burning a substance in the pipe bowl.

In order fully to answer the question *why*, it is necessary to put the pipe within its cultural context. Once it can be regarded as a single element among the others which constitute the activity known as smoking, the analysis of *what*, *how*, and *why* may begin again, only this time on a larger scale. Such a broad collection of elements which constitute any special

activity is generally known as a complex, and a complex is analyzed in the same manner as any individual artifact. Thus, our question *why* essentially brings us back full circle to the *what* again. The next step, the analysis of the entire smoking complex, is beyond the scope of this essay.

Our brief analysis of a Plains Indian smoking pipe is meant to illustrate some of the procedures employed by anthropologists in their study of material culture. The visitor who asks the questions *what*, *how*, and *why* about the specimens exhibited in the Museum may derive not only a greater appreciation of the specimens but also a deeper understanding of the life and culture of the people who made and used them.



FEATHER-DECORATED CANOE BASKET

So called because of its shape, this example is remarkable for its unusually large size. The surface is entirely covered with wild canary and mallard duck feathers, in yellow and green; small shell beads and triangular pendants of abalone are suspended from the rim. Such objects were made for gifts, and were also burned in crematory rites as offerings to the deceased. Collected by Judge Nathan Bijur.

POMO; California
MAI/HF 23/5700

circa 1900
61 x 24 inches



Carved Stone Hacha

This elaborately worked object from El Tajín has a foliate design in the form of a bird's head. There are traces of original paint on the surface, and the whitish residue is copal, a resinous substance used as incense by the Mayans. Veracruz, Mexico, C. 750-900 A.D. (24/3592), 7½ x 9 in.

No, this issue of *Indian Notes* does not look different. Wait til Summer! — Ed.

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